

UNIFORM STANDARD DETAILS

for

PUBLIC WORKS CONSTRUCTION

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**1998
ARIZONA**

(Includes Revisions Through 2003)

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DETAIL NO.



**STANDARD DETAIL
ENGLISH**

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DETAIL NO.

100-1

400 SERIES SEWER INFORMATION

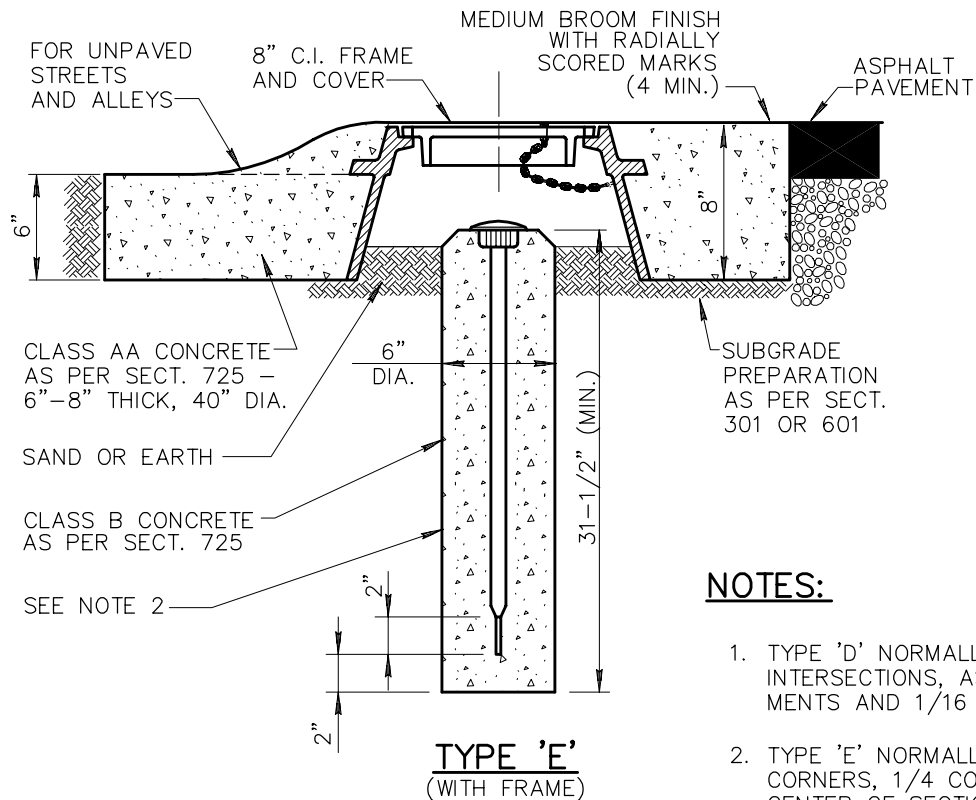
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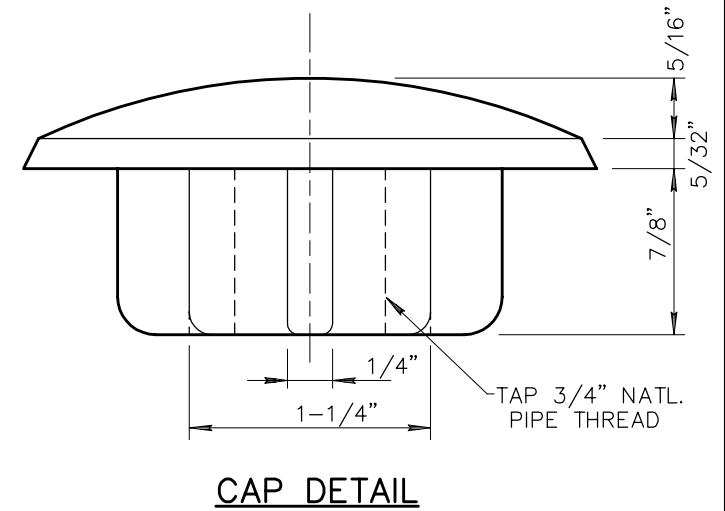
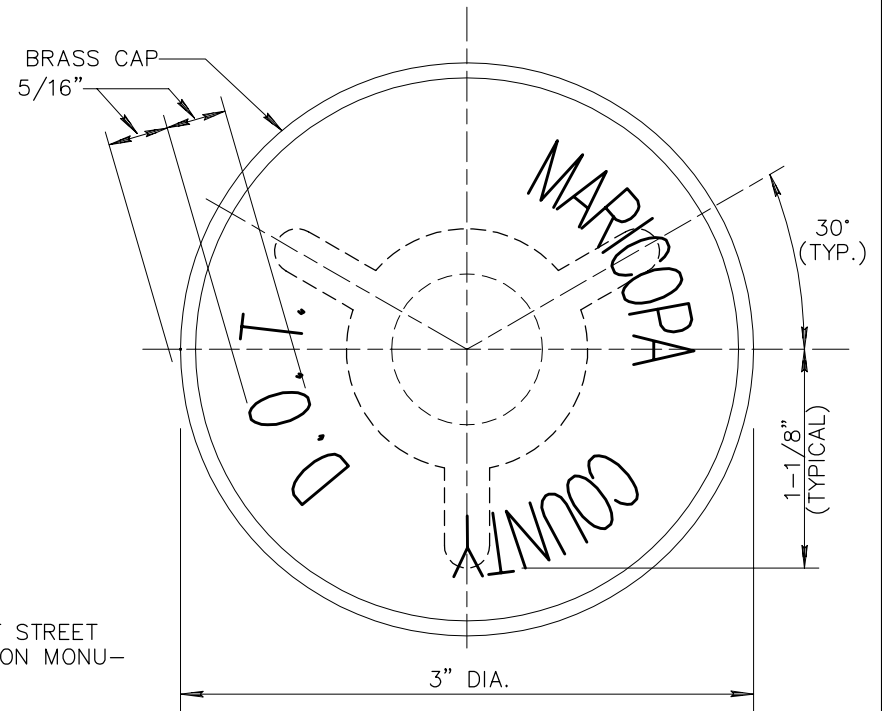
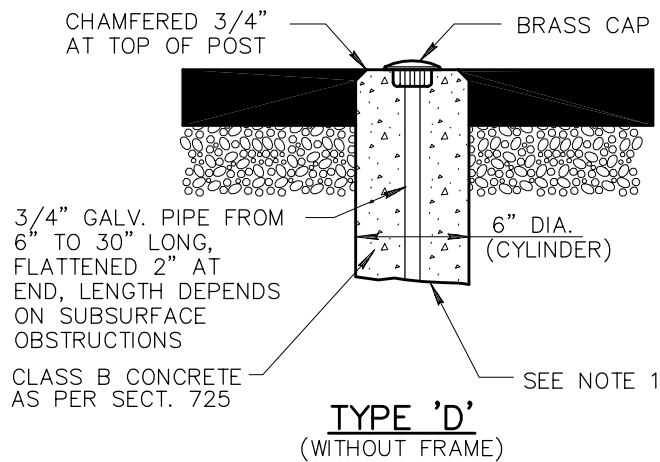
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NOTES:

1. TYPE 'D' NORMALLY USED AT STREET INTERSECTIONS, AS SUBDIVISION MONUMENTS AND 1/16 CORNERS.
2. TYPE 'E' NORMALLY USED ON SECTION CORNERS, 1/4 CORNERS AND AT THE CENTER OF SECTIONS. CONCRETE POST IS CHAMFERED 3/4" AT TOP. MINIMUM LENGTH OF POST 31-1/2". LENGTH DEPENDS ON SUBSURFACE OBSTRUCTIONS SUCH AS OLD CONCRETE PAVING, ROCK, ETC. 3/4" GALVANIZED PIPE SET IN THIS POST SHALL BE A MINIMUM OF 30" LONG EXCLUSIVE OF COUPLING, SEE PLANS.
3. CAP TO BE CONSTRUCTED OF RED BRASS OR BRONZE.
4. FRAME AND COVER TO INCLUDE CHAIN PER STD. DETAIL 270.



DETAIL NO.

120-2



STANDARD DETAIL
ENGLISH

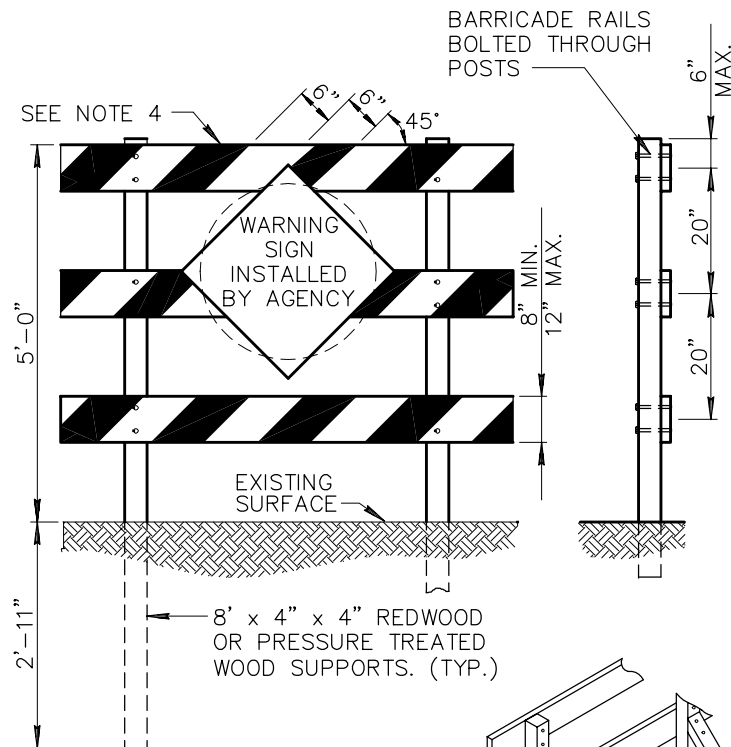
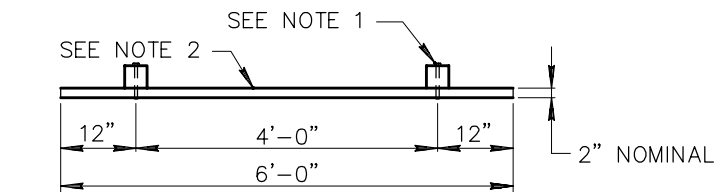
SURVEY MARKER
(FOR UNINCORPORATED AREAS OF COUNTY)

REVISED

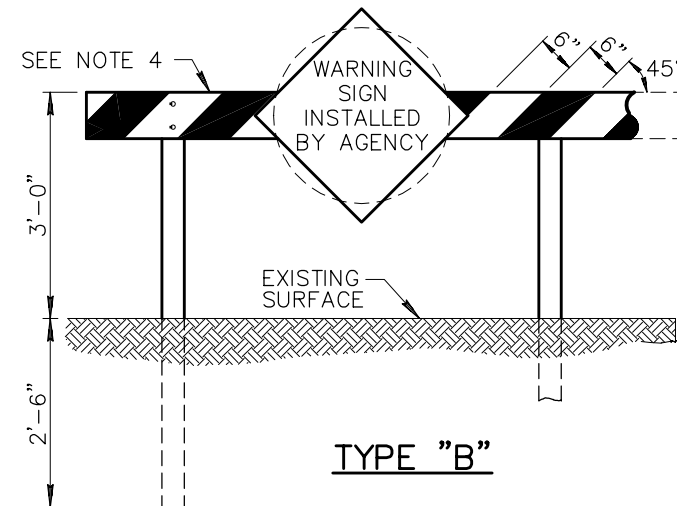
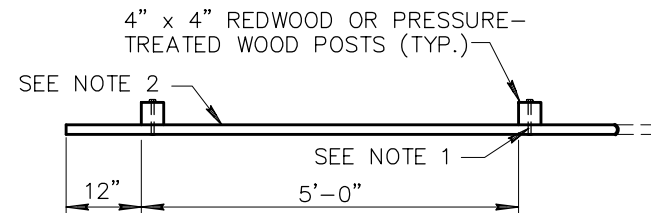
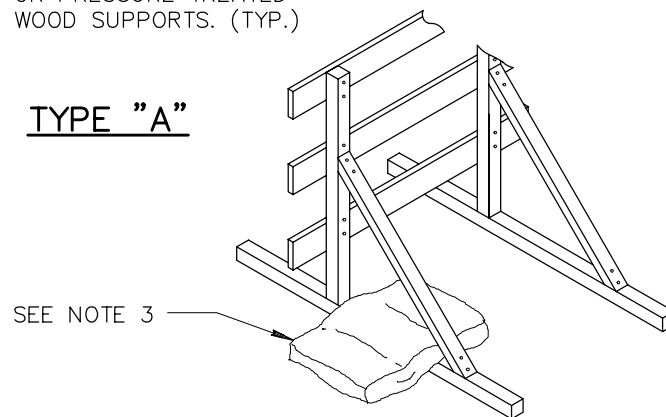
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DETAIL NO.

120-2



TYPE "A"



NOTES:

1. FASTEN WITH 1/2" x 5" LAG SCREWS WITH 2 FLAT WASHERS OR (2) 5/8" BOLTS, WITH 4 FLAT WASHERS.
2. 2" x 8" DOUGLAS FIR PLANK (LENGTH TO BE DETERMINED ON PLANS.)
3. WHEN BARRICADE (TYPE "A") IS CONSTRUCTED ON BASES INSTEAD OF POSTS SET INTO THE GROUND, IT MAY BE DESIRABLE TO BALLAST THE BASES WITH SAND BAGS OR BY STAKING TO PROVIDE RESISTANCE TO OVERTURNING DURING PERIODS OF HIGH WINDS.
4. TWO COATS OF WHITE PAINT PER SECTION 790 SHALL BE APPLIED TO ALL EXPOSED SURFACES OF THE BARRICADE. AN ADDITIONAL TWO COATS OF ORANGE PAINT PER SECTION 790 SHALL BE APPLIED TO CREATE THE ALTERNATE ORANGE AND WHITE STRIPES FOR TEMPORARY BARRICADES AND TWO COATS OF RED PAINT PER SECTION 790 SHALL BE APPLIED TO CREATE ALTERNATE RED AND WHITE STRIPES FOR PERMANENT BARRICADES. HIGHWAY SAFETY SPHERES (BEADS) PER ADOT 708-2.02 SHALL BE APPLIED BY HAND TO ALL CROSS MEMBERS, FRONT AND BACK AND ON BOTH COLORS, IMMEDIATELY AFTER PAINTING. THE STRIPES SHALL SLOPE DOWNWARD IN THE DIRECTION TRAFFIC IS TO PASS.

DETAIL NO.

130



**STANDARD DETAIL
ENGLISH**

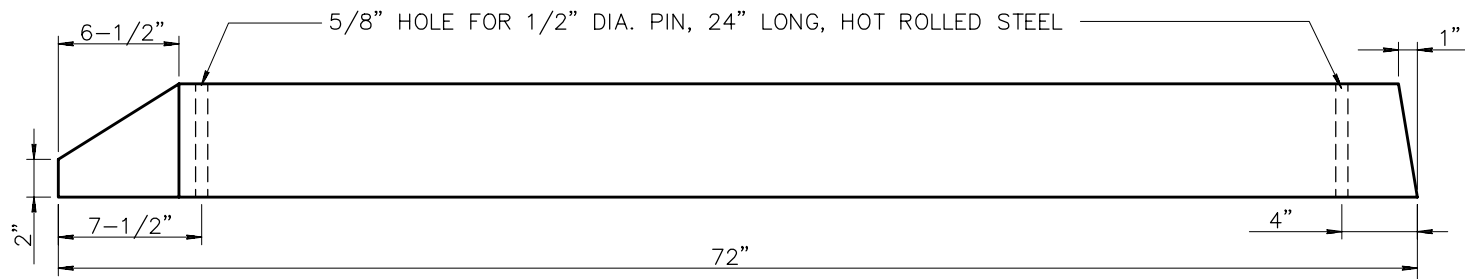
BARRICADES

REVISED

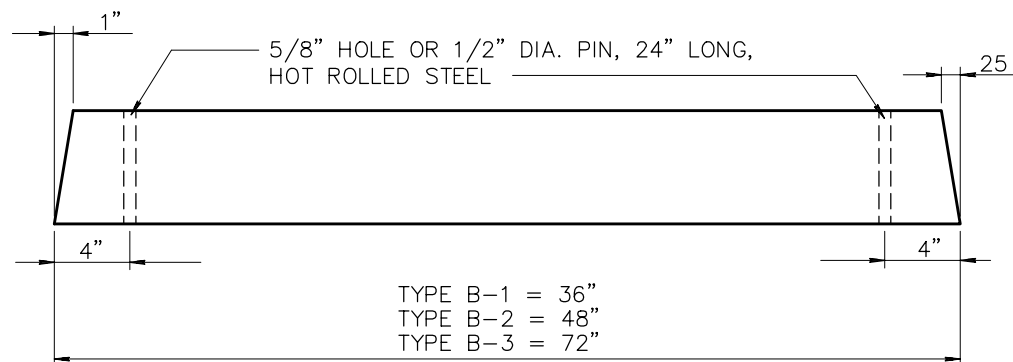
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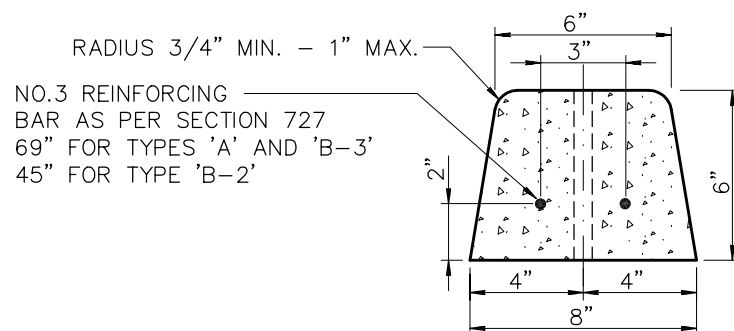
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TYPE A



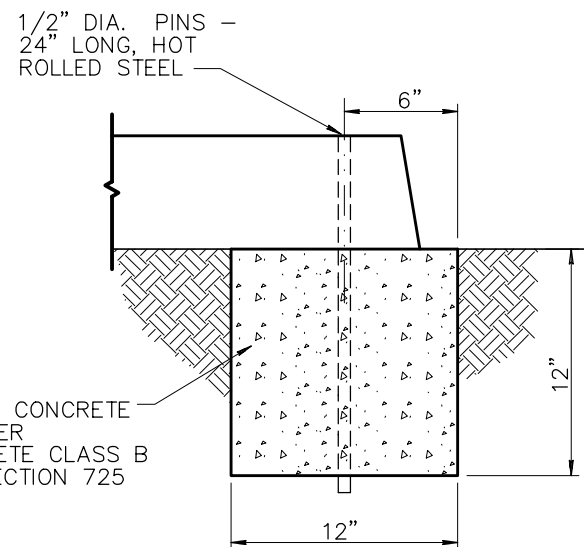
TYPE B-1, B-2, AND B-3



TYPICAL SECTION

NOTES:

1. DIMENSIONAL AND REINFORCEMENT CHANGES WILL BE PERMITTED UPON PRIOR WRITTEN APPROVAL OF THE ENGINEER.
2. UNLESS OTHERWISE NOTED, CONCRETE SHALL BE CLASS 'A' PER SECTION 725.



**SAFETY CURB
INSTALLATION ON DIRT**

DETAIL NO.

150



STANDARD DETAIL
ENGLISH

PRECAST SAFETY CURB

REVISED

DETAIL NO.

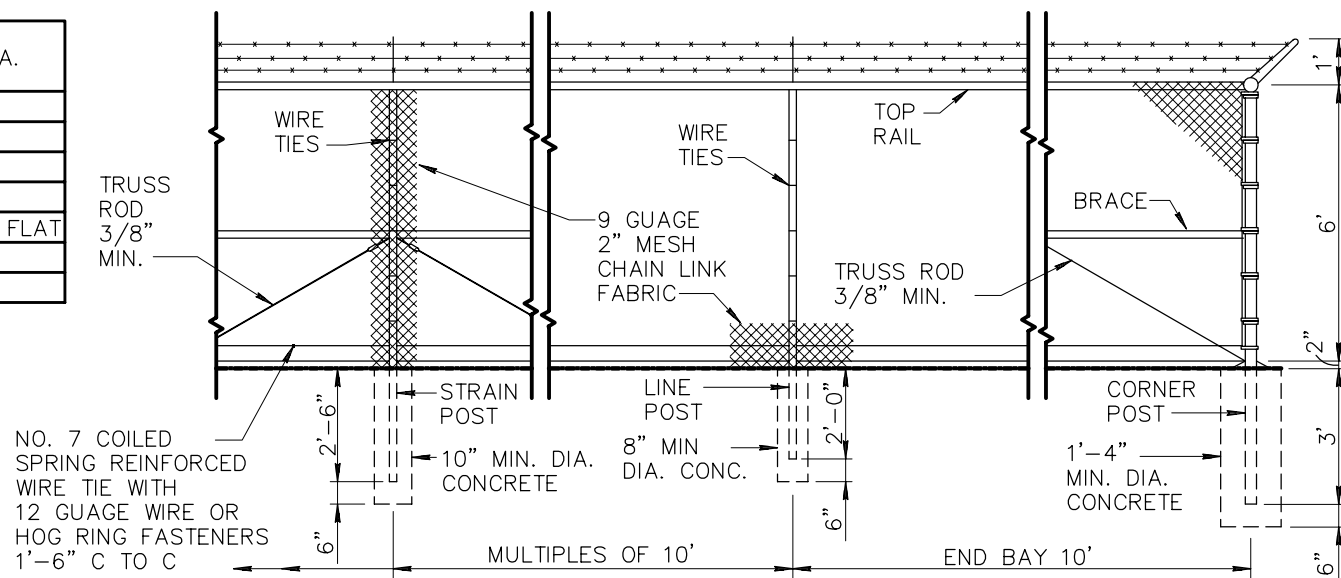
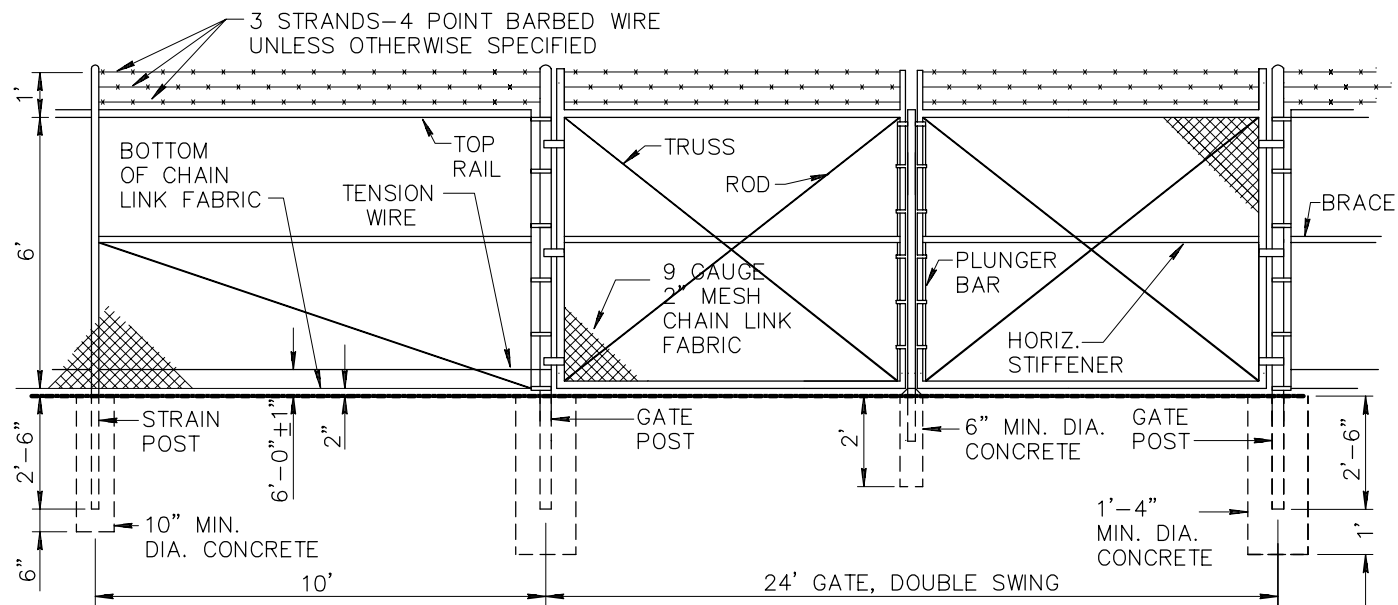
150

NOTES

1. ALL CONCRETE SHALL BE CLASS 'C' PER SECT. 725.
2. FITTINGS NOT SPECIFICALLY DETAILED SHALL BE HEAVY DUTY DESIGN.
3. STRAIN POSTS SHALL BE SPACED AT 500' MAXIMUM SPACING.
4. BOTH CORNER AND STRAIN POSTS SHALL HAVE STRAIN PANELS.
5. ALL POSTS SHALL BE CAPPED.
6. MEMBER SIZES SHALL BE THE FOLLOWING:

MEMBER	AISC SIZE	OUTSIDE DIA.
CORNER POST	2-1/2"	2.875"
LINE POST	1-1/2"	1.900"
STRAIN POST	1-1/2"	1.900"
BRACE	1-1/4"	1.666"
STRETCH BAR	3/16"x3/4" FLAT	3/16"x3/4" FLAT
GATE POST	3-1/2"	4.000"
TOP RAIL	1-1/4"	1.666"

7. CONSTRUCTION AND MATERIALS SHALL CONFORM TO SECT. 420 AND 722, RESPECTIVELY. SEE TABLE 722 FOR WEIGHTS OF MEMBERS.



DETAIL NO.

160



**STANDARD DETAIL
ENGLISH**

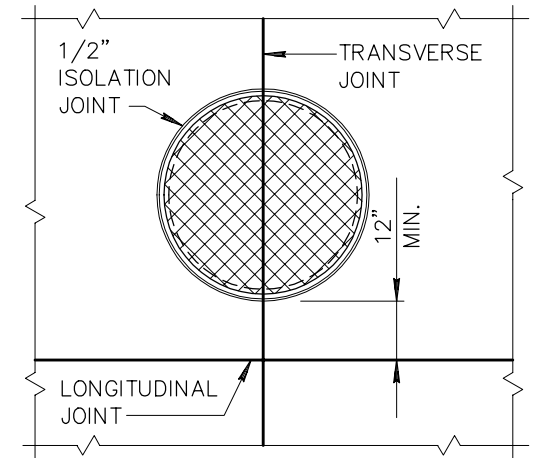
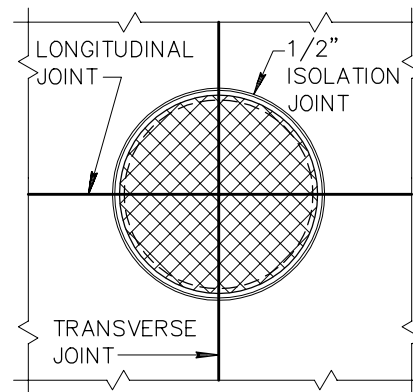
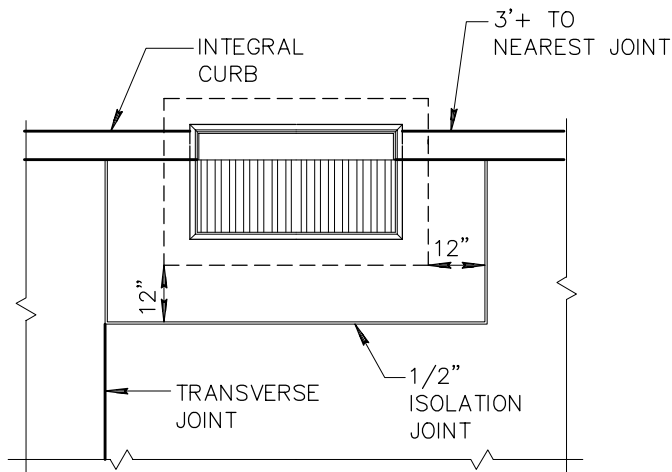
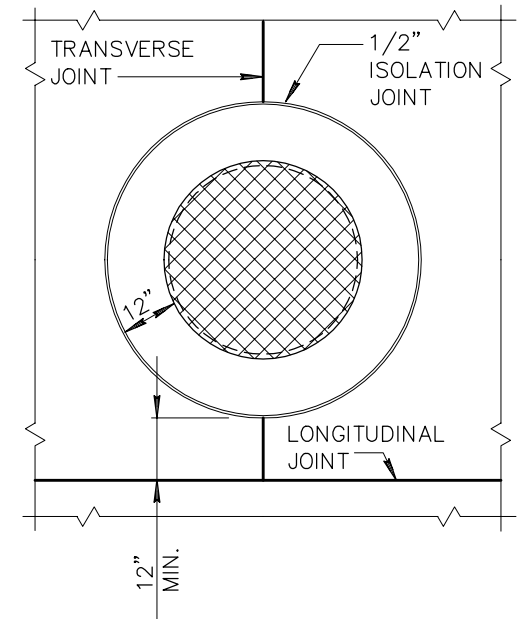
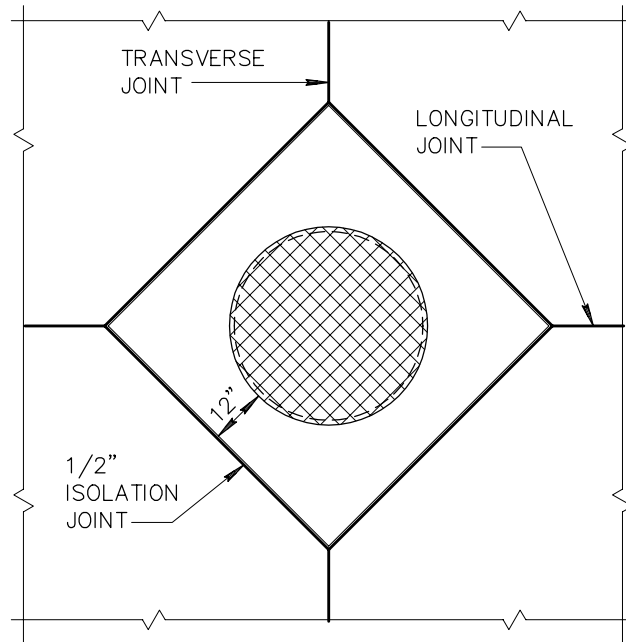
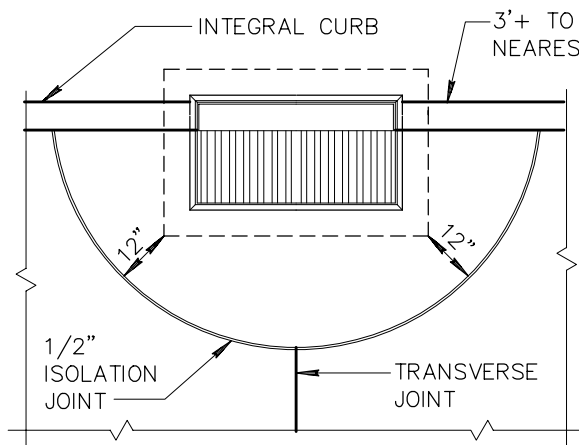
**6' CHAIN LINK
FENCE AND GATE**

REVISED

01-01-2003

DETAIL NO.

160



DRAINAGE INLET

MANHOLE COVERS

MANHOLE COVERS

DETAIL NO.

224



MARICOPA
ASSOCIATION of
GOVERNMENTS

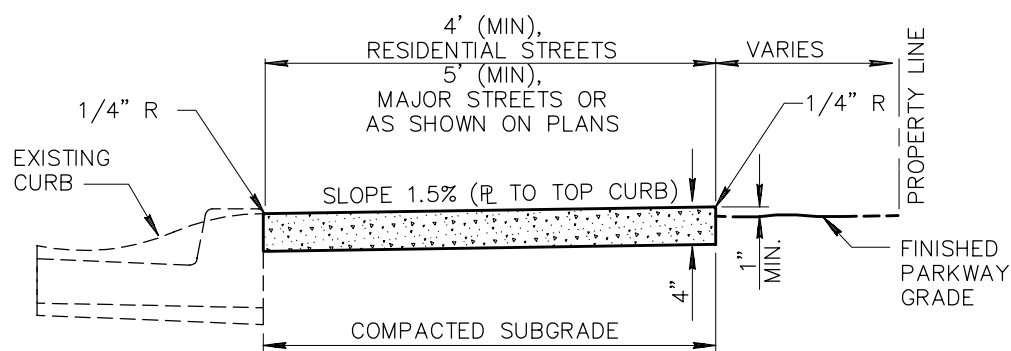
STANDARD DETAIL
ENGLISH

JOINT FOR DRAINAGE INLETS
AND MANHOLE COVERS

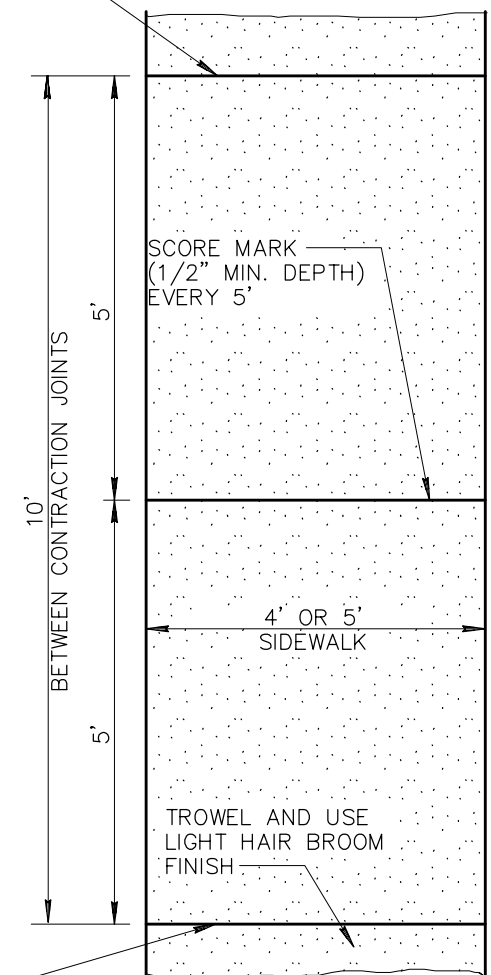
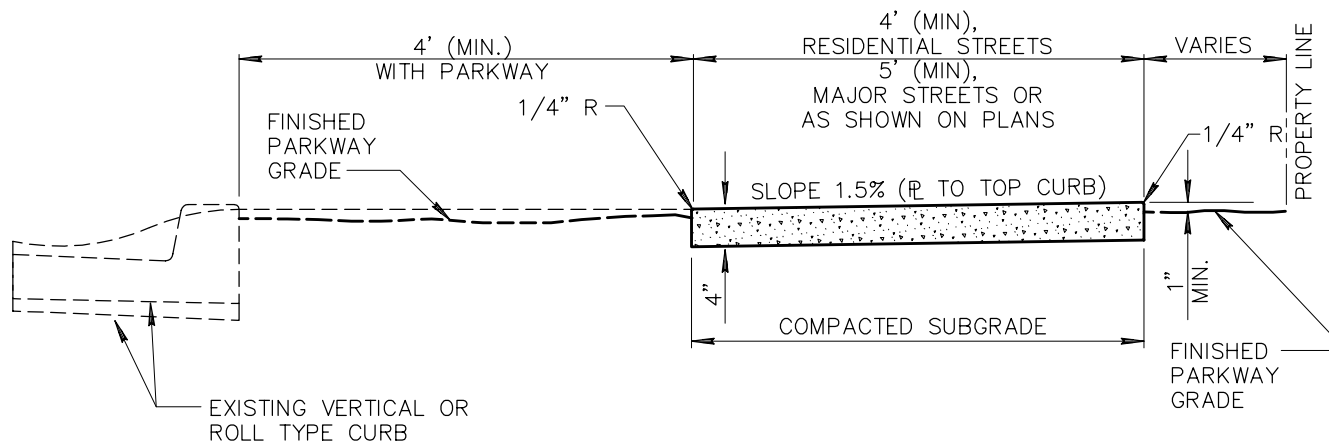
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DETAIL NO.

224

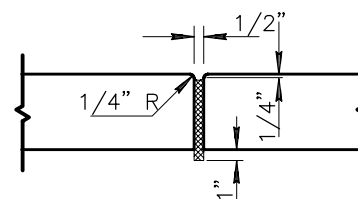


CURB AND GUTTER
CONTRACTION JOINT
SHALL MATCH
SIDEWALK JOINT

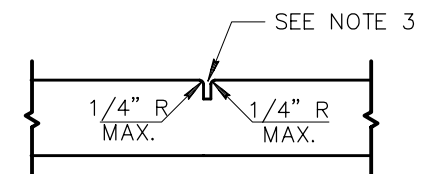


NOTES:

1. SIDEWALK CONSTRUCTION SHALL CONFORM TO SECT. 340.
2. EXPANSION JOINTS SHALL BE 1/2" BITUMINOUS TYPE PREFORMED EXPANSION JOINT FILLER, A.S.T.M. D-1751.
3. LARGE AGGREGATE, IN CONTRACTION JOINT, SHALL BE SEPARATED TO A DEPTH OF 1", FINISH DEPTH SHALL BE A MINIMUM OF 3/4".
4. EXPANSION JOINT 50' MAXIMUM SPACING PER SECT. 340.
5. CLASS 'B' CONCRETE CONSTRUCTION AS PER SECT. 725.



EXPANSION JOINT



CONTRACTION JOINT

DETAIL NO.

230



STANDARD DETAIL
ENGLISH

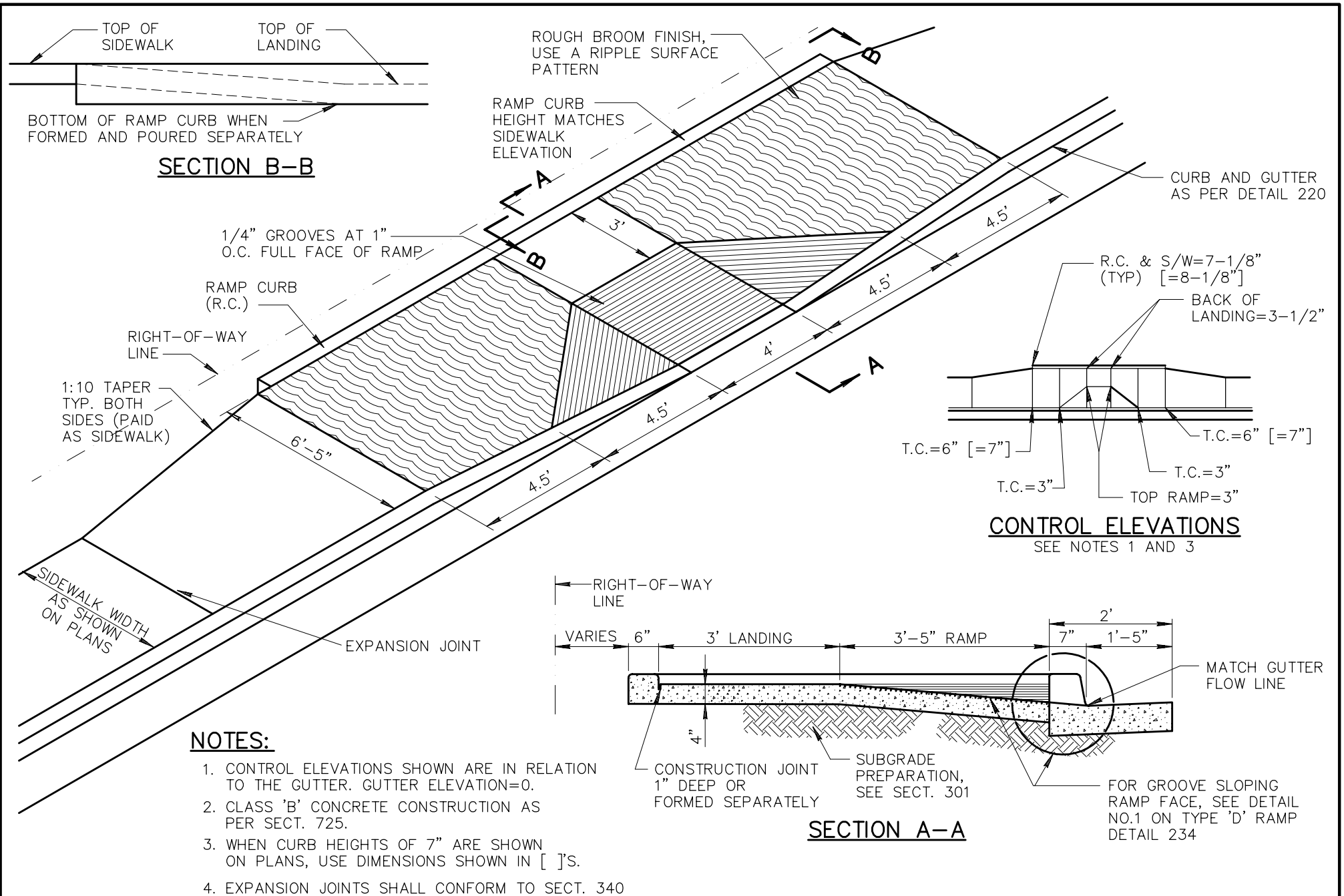
SIDEWALKS

REVISED

01-01-2003

DETAIL NO.

230



DETAIL NO.

233



**STANDARD DETAIL
ENGLISH**

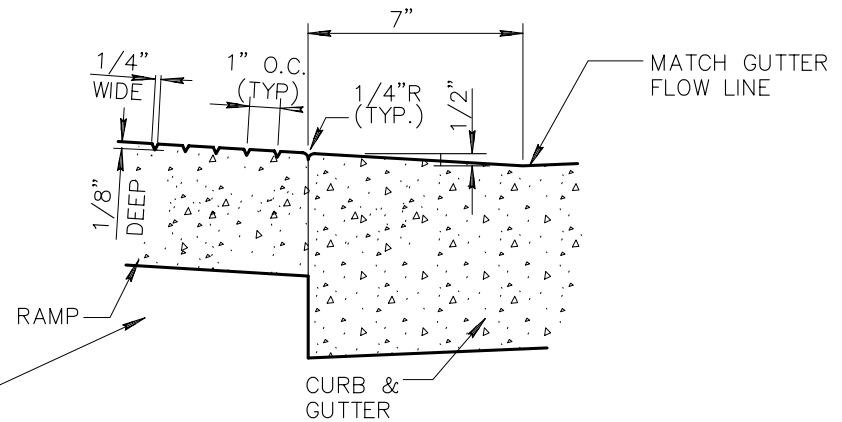
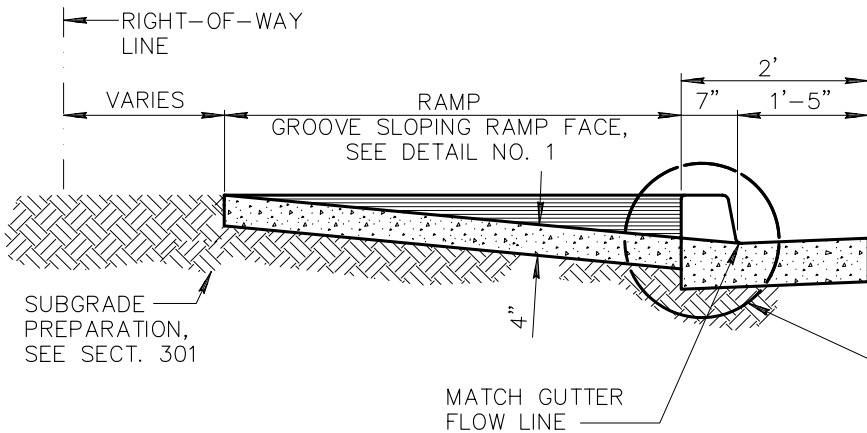
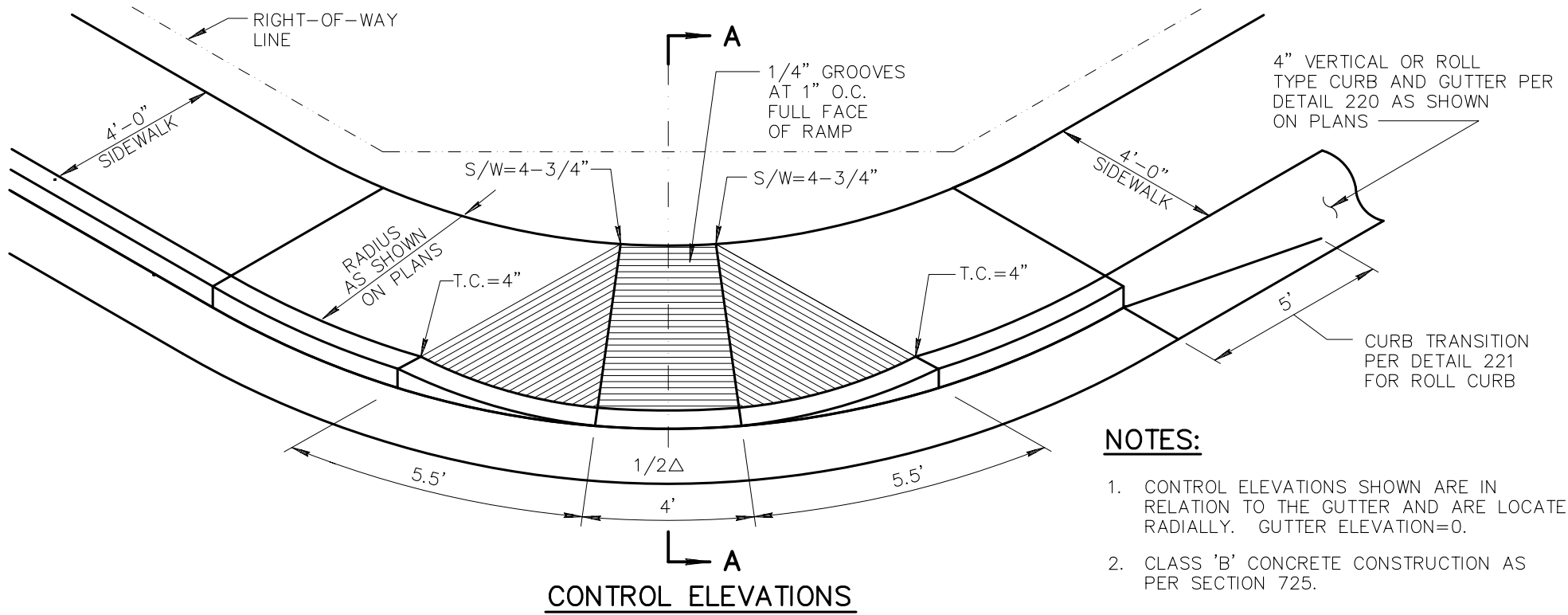
SIDEWALK RAMPS - TYPE 'C'

REVISED

01-01-2003

DETAIL NO.

233



DETAIL NO.

234



STANDARD DETAIL
ENGLISH

SIDEWALK RAMPS - TYPE 'D'

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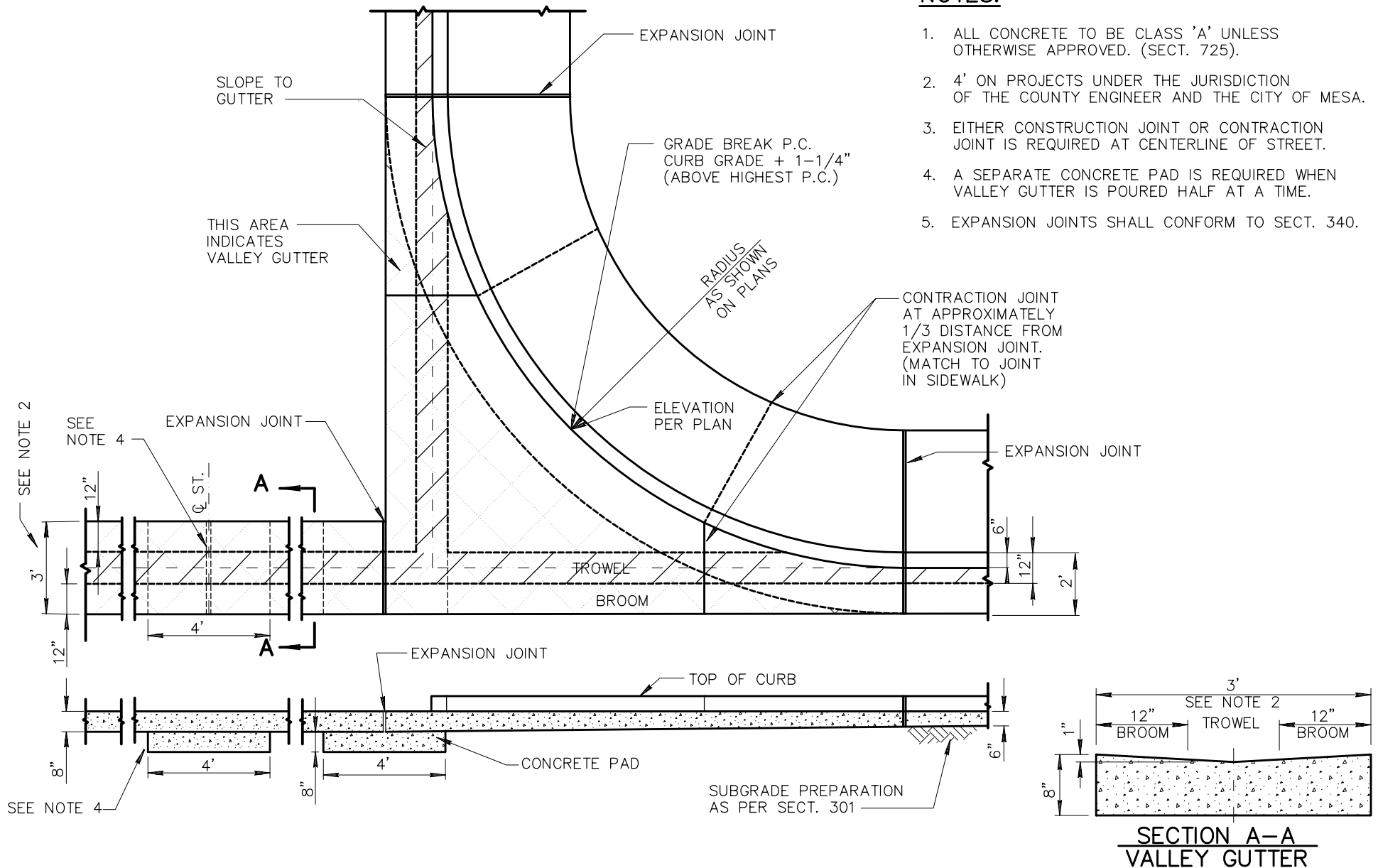
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DETAIL NO.

234

NOTES:

1. ALL CONCRETE TO BE CLASS 'A' UNLESS OTHERWISE APPROVED. (SECT. 725).
2. 4' ON PROJECTS UNDER THE JURISDICTION OF THE COUNTY ENGINEER AND THE CITY OF MESA.
3. EITHER CONSTRUCTION JOINT OR CONTRACTION JOINT IS REQUIRED AT CENTERLINE OF STREET.
4. A SEPARATE CONCRETE PAD IS REQUIRED WHEN VALLEY GUTTER IS POURED HALF AT A TIME.
5. EXPANSION JOINTS SHALL CONFORM TO SECT. 340.



DETAIL NO.

240



STANDARD DETAIL
ENGLISH

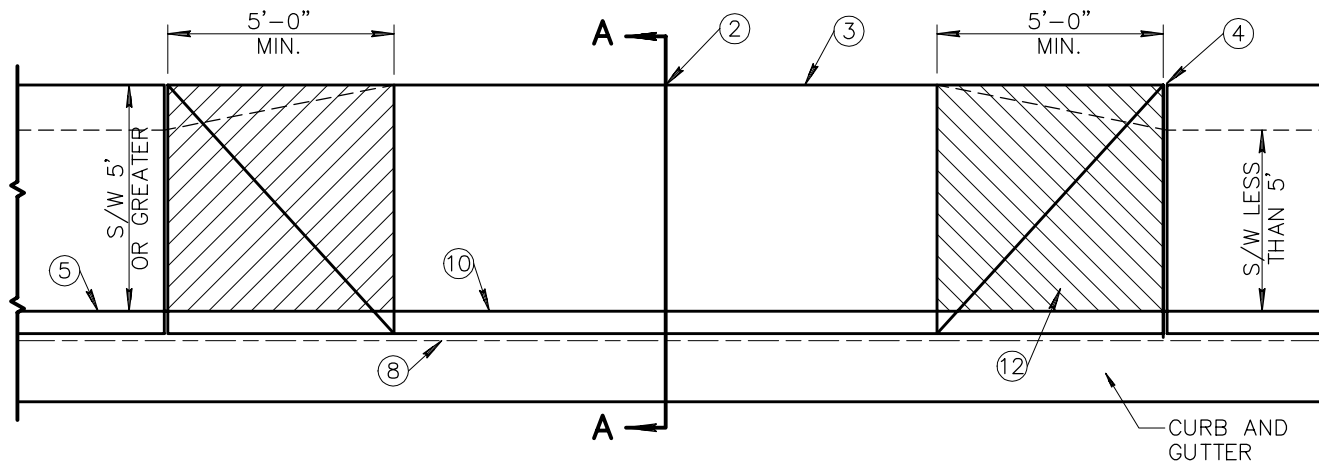
VALLEY GUTTER

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01-01-2003

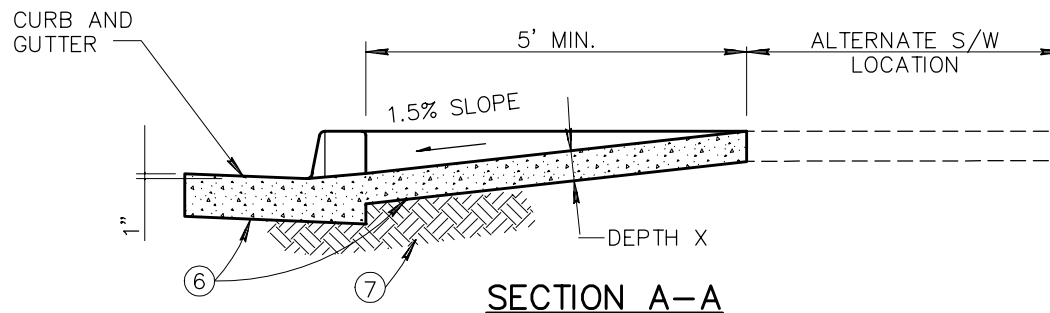
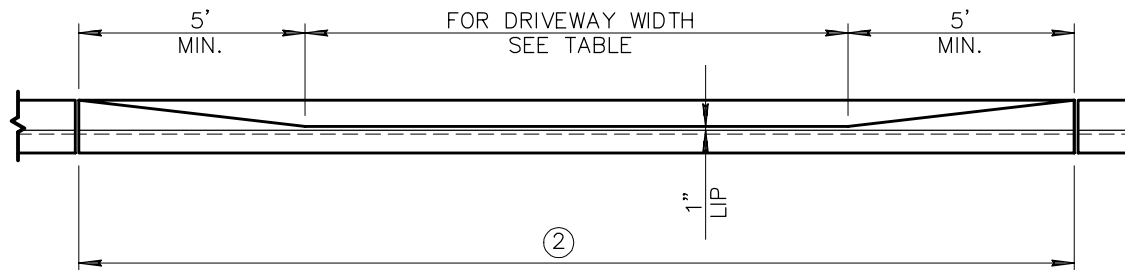
DETAIL NO.

240



NOTES:

- DEPRESSED CURB SHALL BE PAID FOR AT THE UNIT PRICE BID FOR THE TYPE OF CURB USED AT THAT LOCATION.
- WHEN WIDTH EXCEEDS 22' PROVIDE A CONTRACTION JOINT ON D/W CENTERLINE.
- BACK OF D/W OR FACE OF FUTURE S/W.
- EXPANSION JOINTS SHALL COMPLY WITH SECTION 340.
- BACK OF CURB – CONSTRUCTION JOINT OR SCORE MARK.
- CLASS 'B' CONCRETE, SECT. 725.
- SUBGRADE PREPARATION, SECT. 301.
- FLOW LINE OF GUTTER.
- DEPRESSED CURB.
- SECT. A-A AND ELEVATION, D/W VERTICAL CURB AND GUTTER OR ROLL TYPE CURB AND GUTTER.
- ROLL TYPE CURB AND GUTTER NOT PERMITTED IN THE CITY OF MESA
- 1/4" GROOVES AT 1" O.C. FULL WIDTH OF 5' WARP SECTION, EACH SIDE OF DRIVEWAY. SEE DETAIL NO. 1 ON TYPE 'D' RAMP DETAIL NO. 234.



COMMERCIAL AND INDUSTRIAL

DRIVEWAY WIDTH	MIN.	MAX.	CLASS	DEPTH ^x
COMMERCIAL	* 16'	40'	B	6"
INDUSTRIAL	* 16'	40'	B	6"
*24' MIN. FOR TWO WAY TRAFFIC				

RESIDENTIAL

DRIVEWAY WIDTH	MIN.	MAX.	CLASS	DEPTH ^x
MAJOR STREET	16'	30'	B	5"
COLLECTOR STREET	* 12'	30'	B	5"
LOCAL STREET	12'	30'	B	5"
*16' DESIRABLE				

DETAIL NO.

250



STANDARD DETAIL
ENGLISH

DRIVEWAY ENTRANCES

REVISED
01-01-2003

DETAIL NO.

250

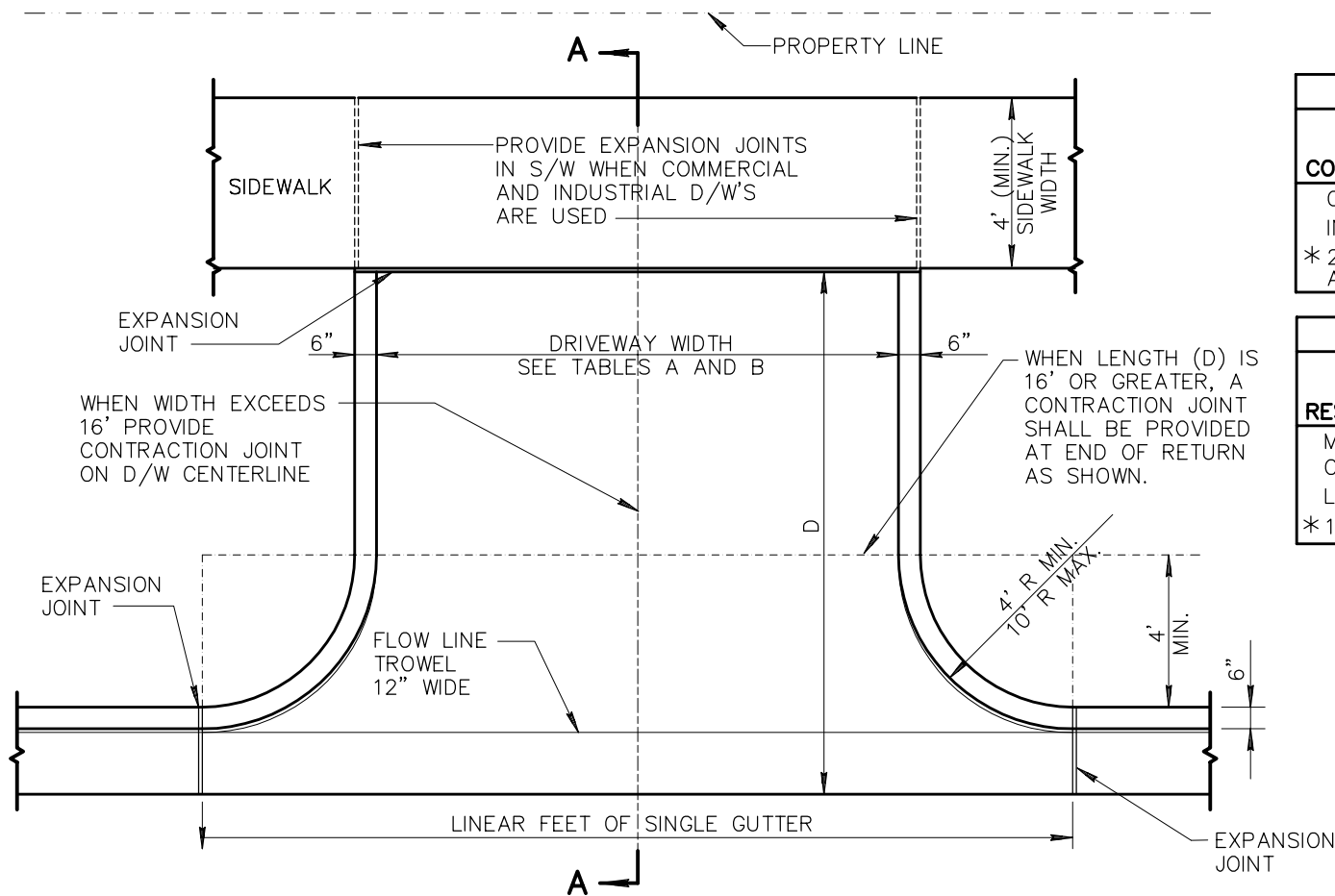
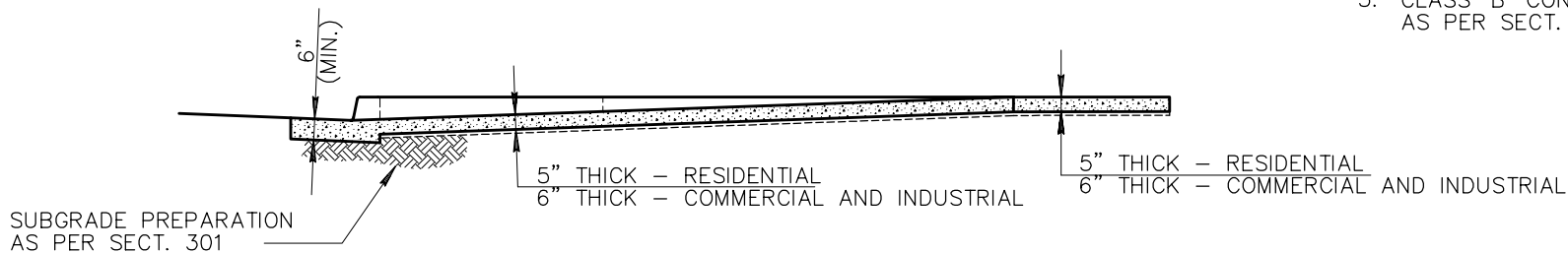


TABLE A		
ZONING	DRIVEWAY WIDTH	
	MIN.*	MAX.
COMMERCIAL AND INDUSTRIAL		
COMMERCIAL	16'	40'
INDUSTRIAL	16'	40'
* 24' WHERE 2-WAY TRAFFIC IS ANTICIPATED		

TABLE B		
ZONING	DRIVEWAY WIDTH	
	MIN.*	MAX.
RESIDENTIAL		
MAJOR STREET	16'	30'
COLLECTOR STREET	12'	30'
LOCAL STREET	12'	30'
* 16' WIDTH IS DESIRABLE		

NOTES:

1. EXPANSION JOINTS SHALL COMPLY TO SECTION 340.
2. THIS TYPE D/W TO BE USED ONLY UPON APPROVAL OF ENGINEER.
3. CLASS 'B' CONCRETE CONSTRUCTION AS PER SECT. 725



SECTION A-A

DETAIL NO.

251



**STANDARD DETAIL
ENGLISH**

RETURN TYPE DRIVEWAYS

REVISED

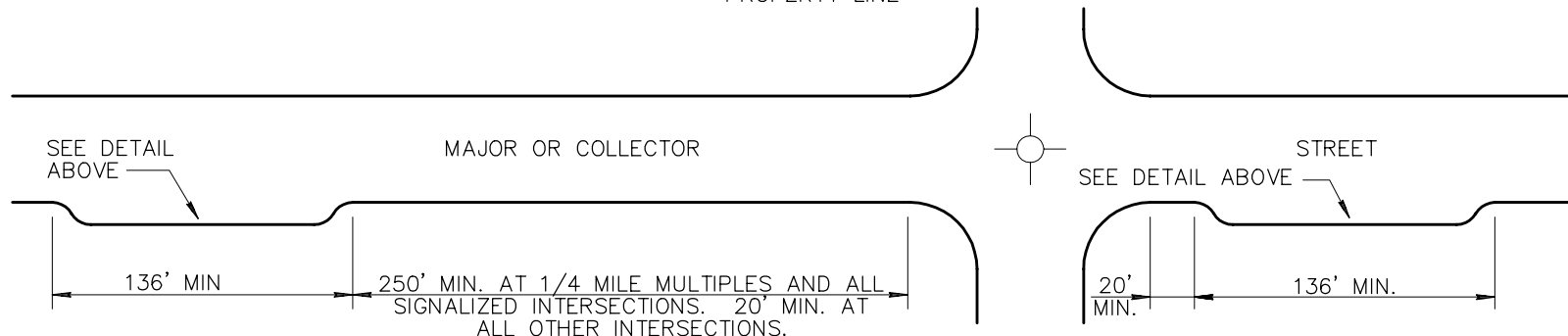
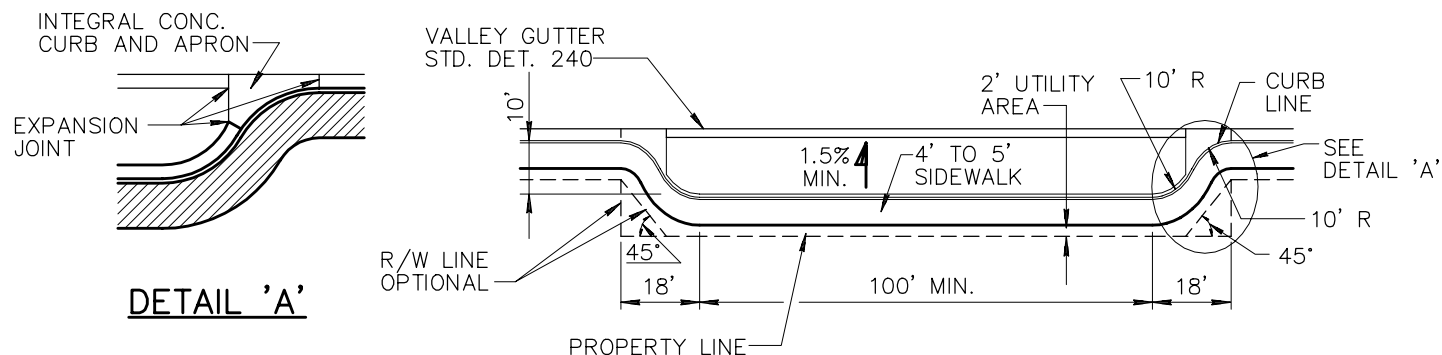
01-01-2003

DETAIL NO.

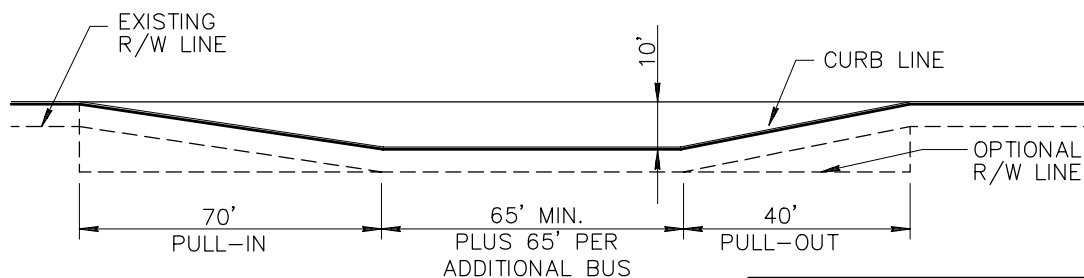
251

NOTES: (PARKING BAY)

1. SUFFICIENT RIGHT-OF-WAY MUST BE AVAILABLE TO CONSTRUCT PARKING BAY.
2. PARKING BAYS WILL NOT BE ALLOWED WHERE THEY CONFLICT WITH BUS STOPS.



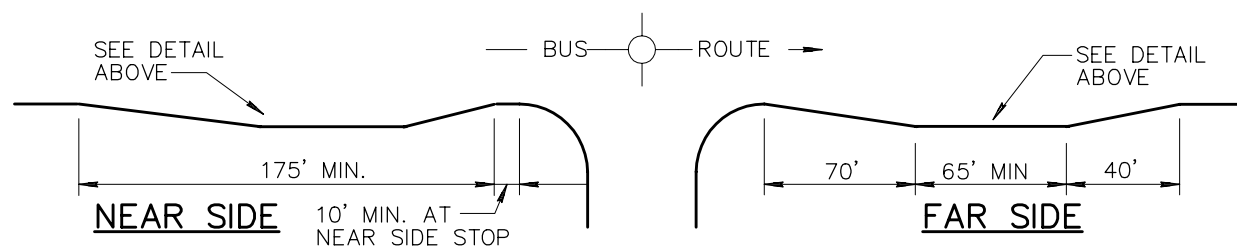
PARKING BAY



DETAIL

NOTES: (BUS BAY)

1. SUFFICIENT RIGHT-OF-WAY MUST BE AVAILABLE TO CONSTRUCT BUS BAY.
2. RADII, SIDEWALK, CURB AND GUTTER, PAVING SLOPE AND CONCRETE APRON SHALL BE CONSTRUCTED AS FOR PARKING BAYS.



BUS BAY

DETAIL NO.

252



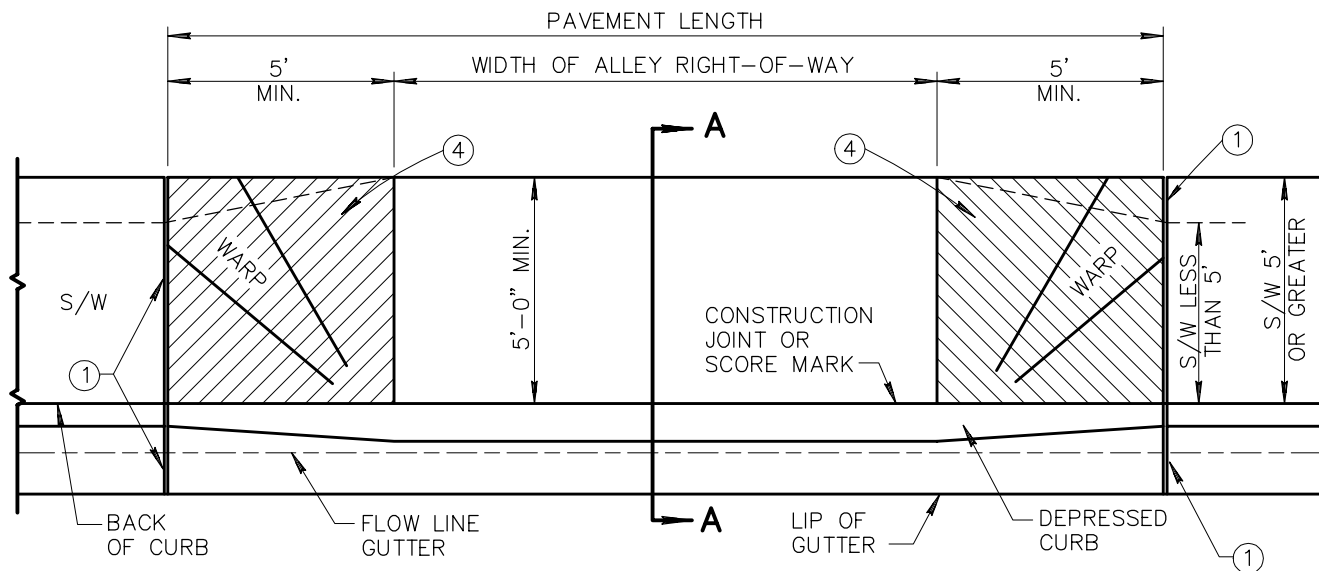
STANDARD DETAIL
ENGLISH

BUS AND PARKING BAYS

REVISED

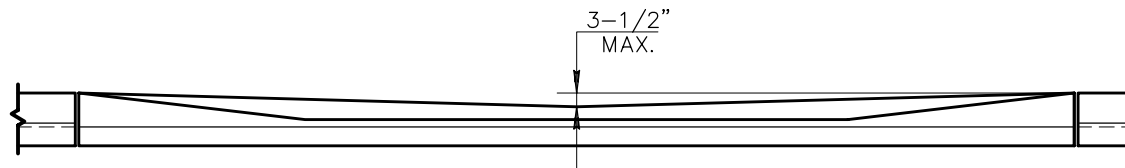
DETAIL NO.

252

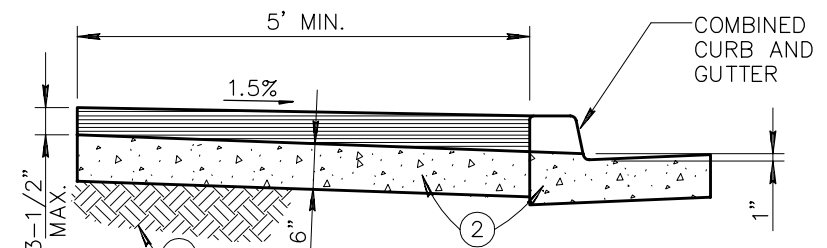


NOTES:

1. EXPANSION JOINTS SHALL CONFORM TO SECTION 340.
2. CLASS 'B' CONCRETE, PER SECT. 725.
3. SUBGRADE PREPARATION, PER SECT. 301.
4. 1/4" GROOVES AT 1" O.C. FULL WIDTH OF 5' WARP SECTION, EACH SIDE OF ALLEY ENTRANCE. SEE DETAIL NO. 1 ON TYPE 'D' RAMP DETAIL NO. 234.



ELEVATION



SECTION A-A

DETAIL NO.

260



STANDARD DETAIL
ENGLISH

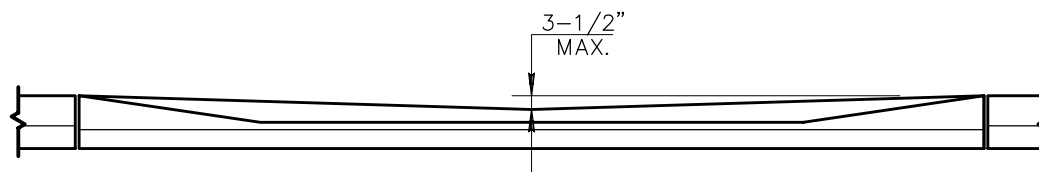
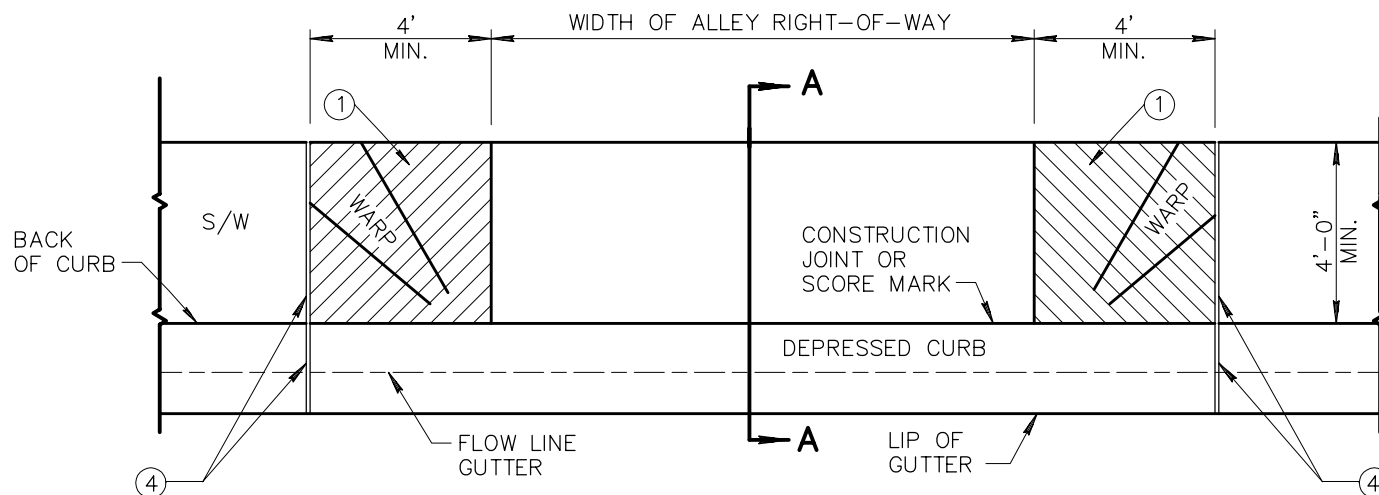
ALLEY ENTRANCE
(WITH COMBINED CURB AND GUTTER)

REVISED

01-01-2003

DETAIL NO.

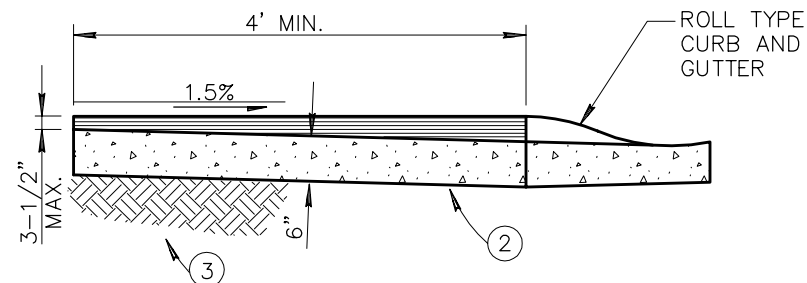
260



ELEVATION

NOTES:

1. 1/4" GROOVES AT 1" O.C. FULL WIDTH OF 4' WARP SECTION, EACH SIDE OF ALLEY ENTRANCE. SEE DETAIL NO. 1 ON TYPE 'D' RAMP DETAIL 234.
2. CLASS 'B' CONCRETE CONSTRUCTION PER SECT. 725.
3. SUBGRADE PREPARATION, PER SECT. 301.
4. EXPANSION JOINTS SHALL CONFORM TO SECT. 340.



SECTION A-A

DETAIL NO.

261



**STANDARD DETAIL
ENGLISH**

**ALLEY ENTRANCE
(WITH ROLL TYPE CURB AND GUTTER)**

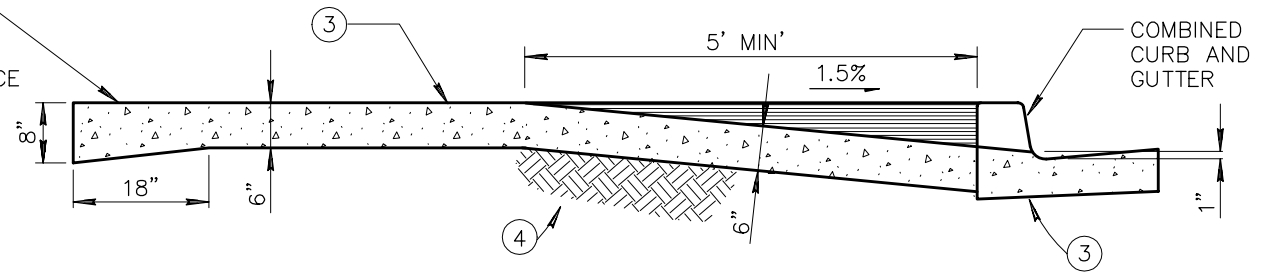
REVISED

01-01-2003

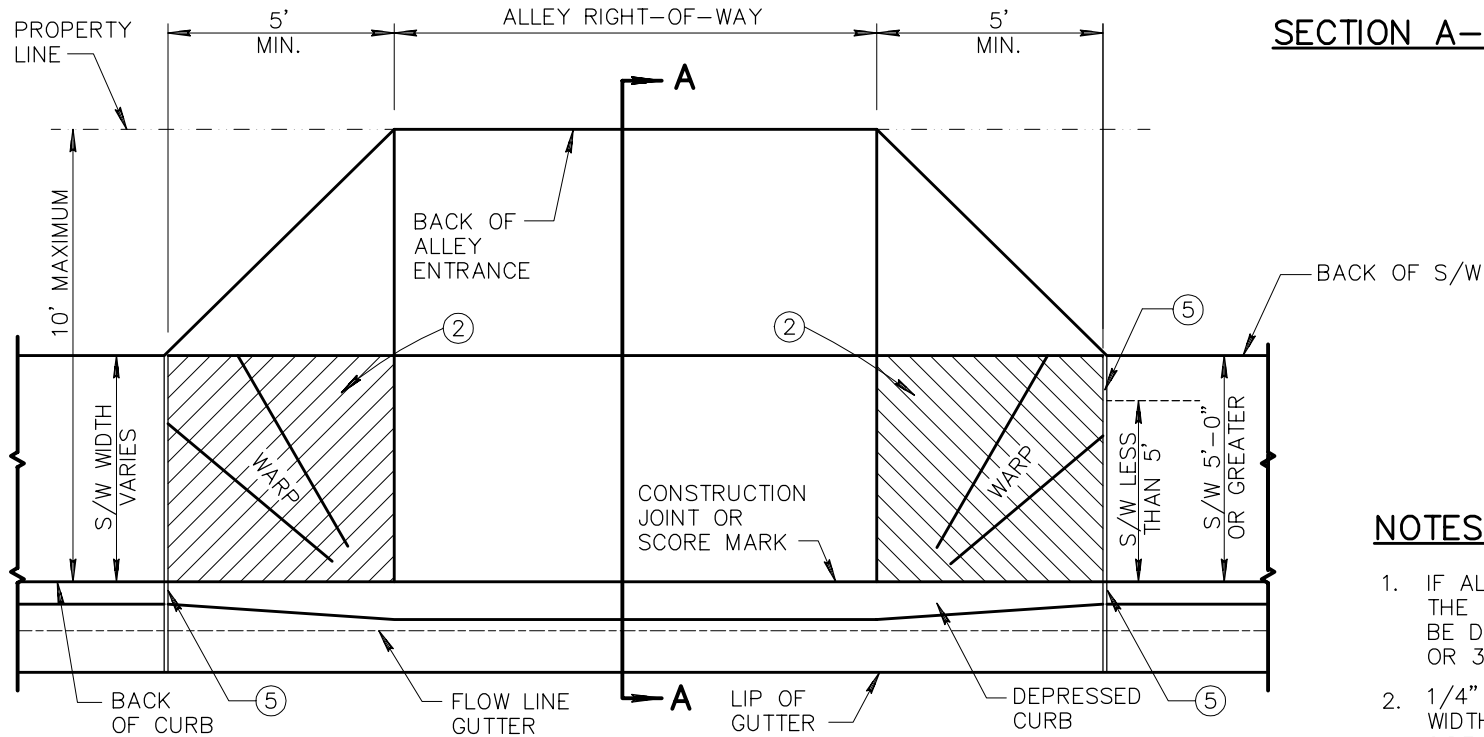
DETAIL NO.

261

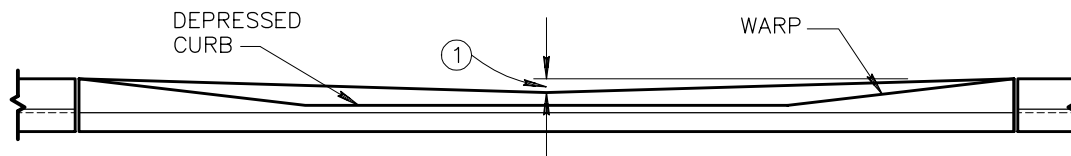
THICKEN CONCRETE
FROM 6" TO
8" IN 18" AT
BACK OF ALLEY ENTRANCE



SECTION A-A



PLAN



ELEVATION

NOTES:

1. IF ALLEY ENTRANCE IS USED FOR DRAINAGE, THE CENTER BACK OF ALLEY ENTRANCE MAY BE DEPRESSED 2" FOR 4" CURB OR 3" FOR 6" CURB.
2. 1/4" GROOVES AT 1" O.C. FULL WIDTH OF 5' WARP SECTION, EACH SIDE OF ALLEY ENTRANCE. SEE DETAIL NO. 1 ON TYPE 'D' RAMP DETAIL NO. 234.
3. CLASS 'B' CONCRETE CONSTRUCTION PER SECT. 725.
4. SUBGRADE PREPARATION, PER SECT. 301.
5. EXPANSION JOINTS SHALL CONFORM TO SECTION 340.

DETAIL NO.

262



**STANDARD DETAIL
ENGLISH**

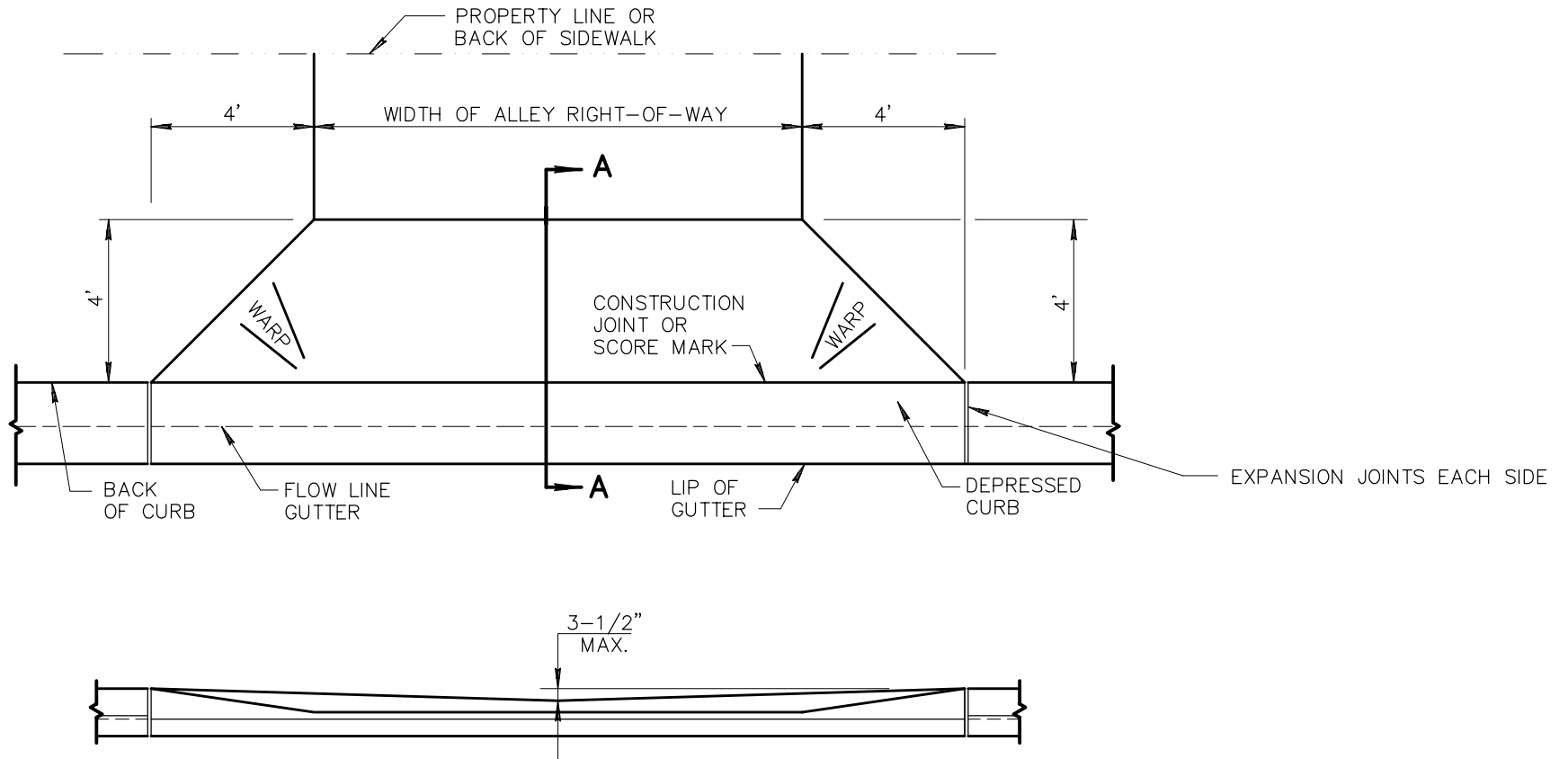
**WING TYPE ALLEY ENTRANCE
(WITH COMBINED CURB AND GUTTER)**

REVISED

01-01-2002

DETAIL NO.

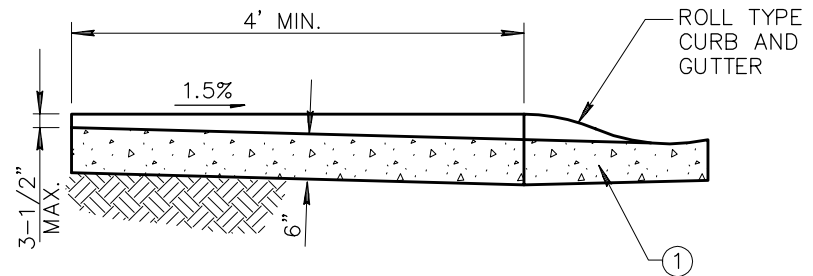
262



ELEVATION

NOTES:

1. CLASS 'B' CONCRETE CONSTRUCTION PER SECT. 725.
2. EXPANSION JOINTS SHALL CONFORM TO SECT. 340.
3. SUBGRADE PREPARATION PER SECTION 301.



SECTION A-A

DETAIL NO.

263



**STANDARD DETAIL
ENGLISH**

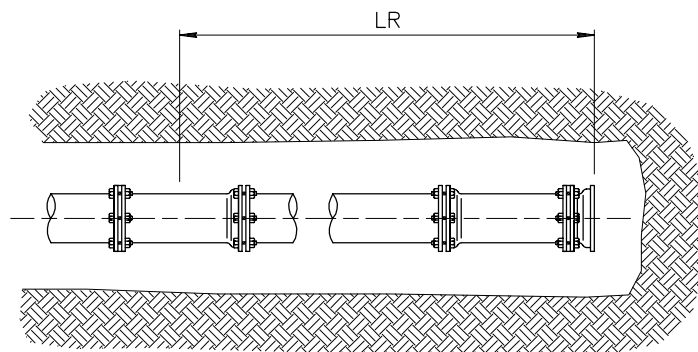
**WING TYPE ALLEY ENTRANCE
(WITH ROLL TYPE CURB AND GUTTER)**

REVISED

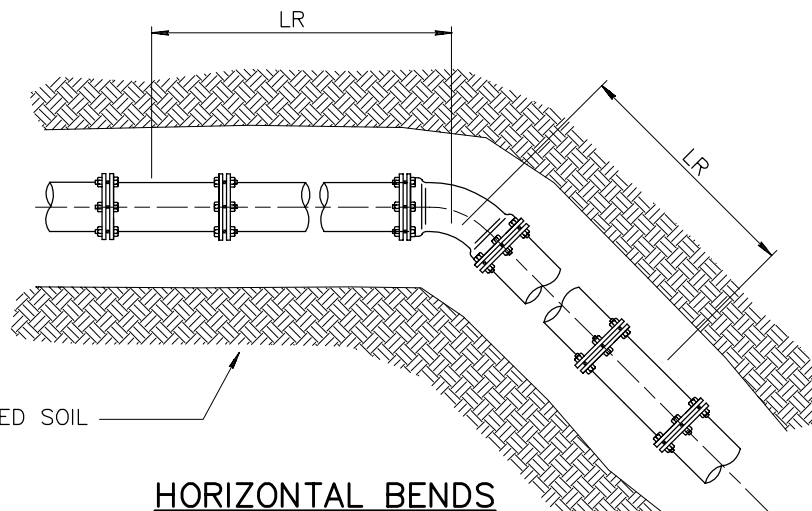
01-01-2002

DETAIL NO.

263

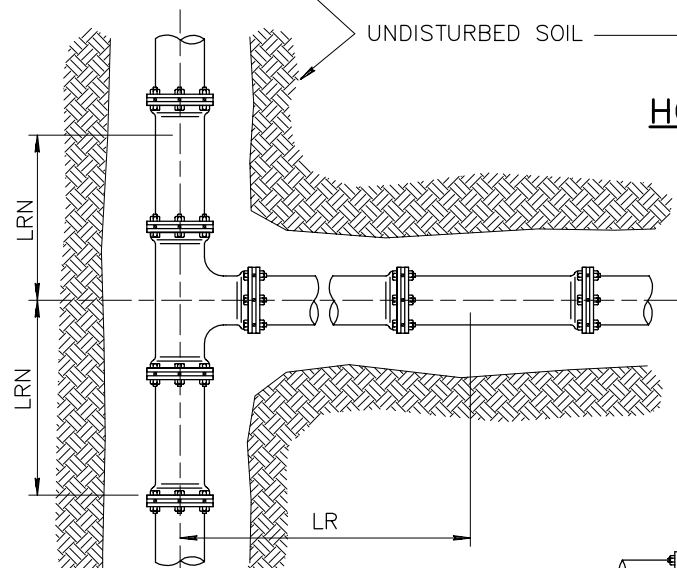


DEAD ENDS

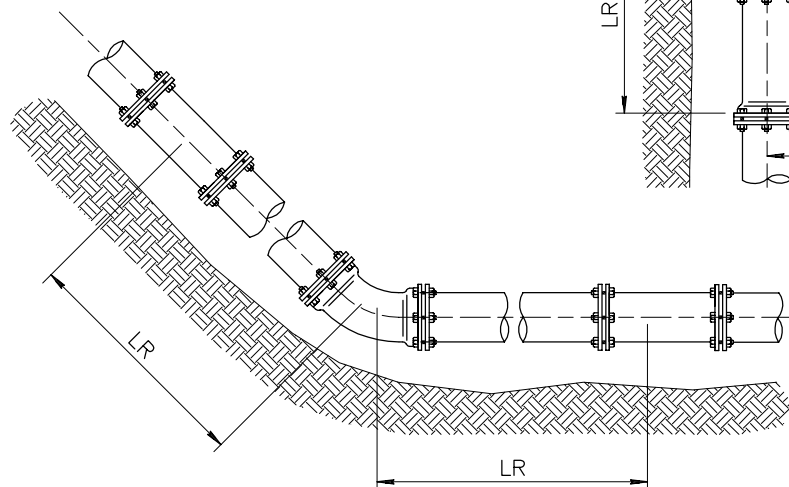


HORIZONTAL BENDS

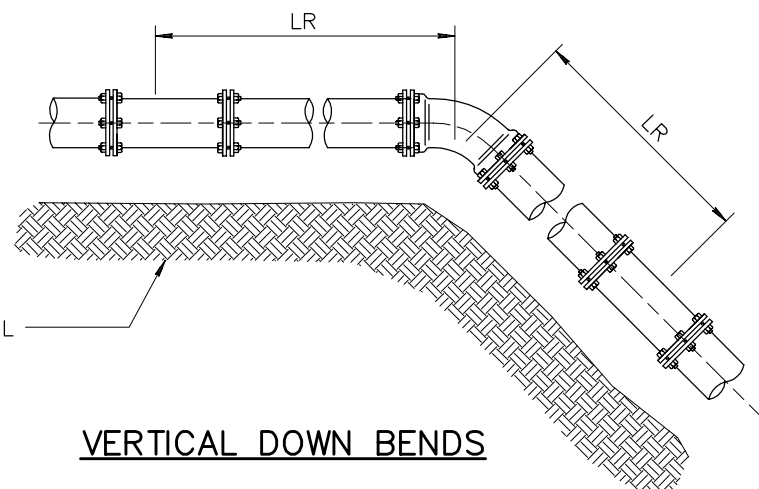
LRN = SHORTEST LENGTH
OF PIPE RESTRAINED TO
THE RUN OF THE TEE
FITTING (BOTH SIDES OF TEE).



TEES



VERTICAL UP BEND



VERTICAL DOWN BENDS

DETAIL NO.

303-1



**STANDARD DETAIL
ENGLISH**

**JOINT RESTRAINT FOR DUCTILE IRON AND
POLYETHYLENE WRAPPED DUCTILE IRON WATER PIPES**

REVISED

DETAIL NO.

303-1

RESTRAINED LENGTHS, LR, FOR DUCTILE IRON PIPE												
NOMINAL PIPE SIZE INCHES	HORIZONTAL BENDS			TEES		VERTICAL OFFSETS						DEAD ENDS
						90° BEND FITTINGS		45° BEND FITTINGS		22-1/2° BEND FITTINGS		
	90°	45°	22-1/2°	LRN=0'	LRN=10'	DOWN BEND	UP BEND	DOWN BEND	UP BEND	DOWN BEND	UP BEND	
4	18	7	4	30	8	31	18	13	7	6	3	31
6	25	10	5	43	20	44	25	18	10	9	5	44
8	32	13	6	56	34	58	32	24	13	11	6	58
10	38	16	8	68	45	69	38	29	16	14	8	69
12	45	19	9	80	57	81	45	34	19	16	9	81
14	51	21	10	91	68	92	51	38	21	18	10	92
16	57	24	11	103	79	104	57	43	24	21	11	104
18	62	26	12	113	90	115	62	48	26	23	12	115
20	68	28	14	125	100	126	68	52	28	25	14	126
24	79	33	16	145	121	147	79	61	33	29	16	147

RESTRAINED LENGTHS, LR, FOR DUCTILE IRON PIPE WITH POLYETHYLENE WRAP												
NOMINAL PIPE SIZE INCHES	HORIZONTAL BENDS			TEES		VERTICAL OFFSETS						DEAD ENDS
						90° BEND FITTINGS		45° BEND FITTINGS		22-1/2° BEND FITTINGS		
	90°	45°	22-1/2°	LRN=0'	LRN=10'	DOWN BEND	UP BEND	DOWN BEND	UP BEND	DOWN BEND	UP BEND	
4	26	11	5	69	18	72	26	30	11	14	5	72
6	36	15	7	99	47	102	36	42	15	20	7	102
8	47	19	9	130	78	133	47	55	19	26	9	133
10	56	23	11	157	103	159	56	66	23	32	11	159
12	65	27	13	185	131	187	65	77	27	37	13	187
14	74	31	15	211	156	214	74	89	31	42	15	214
16	82	34	16	238	183	241	82	100	34	48	16	241
18	90	37	18	263	207	266	90	110	38	53	18	266
20	98	41	20	289	233	292	98	121	41	58	20	292
24	113	47	22	337	280	340	113	141	47	68	22	340

NOTES:

1. ALL JOINTS WITHIN THE SPECIFIED LENGTH LR MUST BE RESTRAINED.
ALL LENGTHS ARE GIVEN IN FEET.
2. THE MAXIMUM TEST PRESSURE SHALL NOT EXCEED 200 PSI
3. THE MINIMUM DEPTH OF BURY SHALL BE 3' TO TOP OF PIPE.
4. RESTRAINED LENGTHS MAY BE REDUCED WHEN SUPPORTED BY ENGINEERING CALCULATIONS.

DETAIL NO.

303-2



STANDARD DETAIL
ENGLISH

**JOINT RESTRAINT FOR DUCTILE IRON AND
POLYETHYLENE WRAPPED DUCTILE IRON WATER PIPES**

REVISED

DETAIL NO.

303-2